

# Dr. JEFFREY W. HUDGENS

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## OVERVIEW

### Twenty-five years of productive scientific research have brought about:

- Multi-disciplinary technical competency acquired through self-directed research programs leading to 110+ scientific publications and two patents.
- Recognition in the scientific community as evidenced by awards, abundant journal citations, and invitations for presentations and manuscripts.
- Strong analytical, writing, and web-authoring abilities.
- Aptitude for developing capabilities and programs in new technical fields.
- Self-assured public-speaking demeanor developed through 140+ scientific presentations before national and international venues.
- Comprehensive expertise developed in three institutions with the design, fabrication, systems integration, and validation of intricate experiments from "waxed-floors up".
- Helpful mentoring skills illustrated by successes of past post-docs and grad-students.
- Productive scientific collaborations with domestic and foreign scientists.
- Proficiency with writing successful technical proposals and with selecting innovative technical-business plans as a staff scientist for the Advanced Technology Program.
- Experience as principal organizer of three international scientific conferences

## TOPICS OF PUBLISHED RESEARCH

- Hadamard Mass Spectrometry
- Evanescent Wave Cavity Ring-down Spectroscopy
- Gas-phase Cavity Ring-down Spectroscopy
- Design of Novel Optical Devices
- Nonlinear Laser Spectroscopy
- Chemical Kinetics of Free Radicals
- Trace Analyses Involving Surfaces
- *Ab Initio* Molecular Structure Calculations
- Computational Models of Complex Chemical Reaction Systems
- Mass Spectrometry
- Thermochemical Properties of Radicals
- Radiationless Processes in Molecules
- Photochemistry
- Infrared Chemiluminescence
- Spectroscopy and Structures of Semiconductor-related Radicals
- Strategic Opportunities in Combustion Research

## EMPLOYMENT

- 1984 – present      Research Chemist, National Institute of Standards and Technology, Physical and Chemical Properties Division
  - ◆ ZP-V (1989- present)
  - ◆ GS-14 (1984-89)
- 1977 – 1984      Research Chemist, Naval Research Laboratory
  - ◆ GM-13, Chemical Kinetics Section (1981-84)
  - ◆ GS-12, Mass Spectrometry Section (1977-81)
- 1975 – 1977      National Research Council Postdoctoral Research Associate at the Naval Research Laboratory

## EDUCATION

- Ph.D. in Physical Chemistry, University of Illinois at Urbana, 1976.
- B.S. in Chemistry, Miami University, Oxford, Ohio, 1971.

**AWARDS**

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| National Institute of Standards and Technology | <ul style="list-style-type: none"><li>• CSTL Technical Achievement Award (1998)</li><li>• Fellow of the American Physical Society (1995)</li><li>• NBS Bronze Medal for Research (1987)</li></ul>                   |
| Naval Research Laboratory                      | <ul style="list-style-type: none"><li>• Invention Cash Award (1983)</li></ul>   |
| University of Illinois                         | <ul style="list-style-type: none"><li>• Haas Foundation Fellowship (1972-73)</li><li>• University of Illinois Summer Fellowship (1972)</li><li>• Phi Lambda Upsilon Chemistry Honorary</li><li>• Sigma Xi</li></ul> |
| Miami University                               | <ul style="list-style-type: none"><li>• James A. Coulter Scholarship (1970-1971)</li></ul>  |

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**PROFESSIONAL SOCIETIES**

- American Physical Society (Fellow)
  - American Chemical Society
  - American Society for Mass Spectrometry
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